800 series

Torquetronic 800

OPTION BOARD

ANALOG OUTPUTS

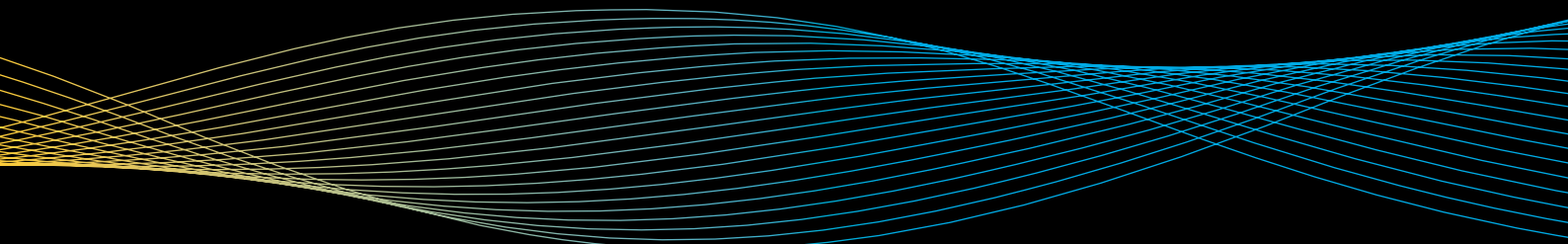SPEED   TORQUE   POWER   TEMP

RS 485

GND TX- TX+ RX- RX+

Torquemeters
LIMITED

high performance test & measurement systems

New generation delivering increased performance.

The 800 family of products offers a flexible display and data acquisition platform for all Torquetronic™ torque measurement systems.

Delivering state-of-the-art signal processing and measurement analysis, the 800 family is designed to be a flexible platform to meet your industry application needs.

810 Signal Processor

The 810 signal processor is the heart of the 800 family. It accurately measures and analyses the Torquetronic™ signals at a sample rate of 10kHz.

The 810 LCD displays Power, Speed, Torque and Temperature. The measurements are also available as four analog outputs or digitally via MODBUS protocol over Ethernet, RS485 or USB.

816 Hazardous Area Field Mount Signal Processor

The 816 packages the 810 signal processor in an Exe industrial stainless steel enclosure. Certified for installation in Zone 2 or Div 2 environments, it includes zener barriers to provide intrinsically safe outputs for connection to the Torquetronic™ torquemeter.

813 19" Rack Mounted Signal Processor

The 813 signal processor and industrial PC are packaged in a 19'' industry standard enclosure providing a direct replacement to the 613.

TorqTo™ the 800 configuration and measurement analysis software, is accessible via 7'' touch screen display and presents an intuitive HMI interface.

Torsional vibration analysis is provided by the TorqTo™ software. FFT, Campbell, Waterfall Plot and Order Analysis are standard displays.
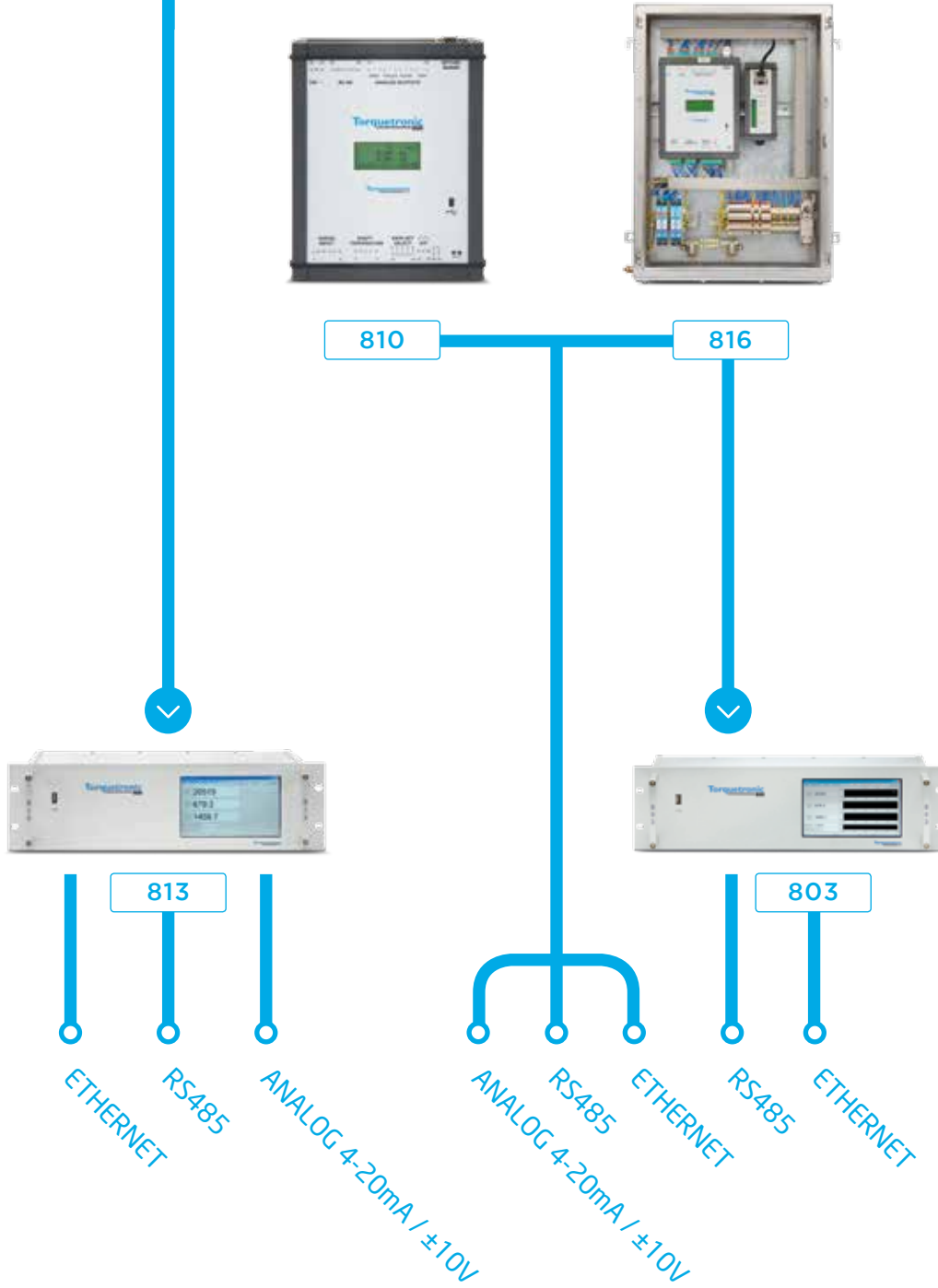
The display screen shows:

TorqTo : 1.1.1.13

Edit   Diagnostics   System   Torsional   Menu   Show Trend   Keyboard   **Torquetronic**

Speed (rpm) **20519**

Torque (Nm) **679.3**

Power (kW) **1459.7**

Data Set 1: 60 T

Shaft Temp 9999.0°C

Torquemeters

8 I 3

803 Remote 19" Panel Display

The 803 provides the operator a control room mounted display via the 7'' touch screen. Operating TorqTo™ it communicates remotely with the field mounted 810 / 816 signal processor over Ethernet or RS485.

The 803 for remote connection via Ethernet or RS485 to 810 or 816 signal processors.

TORQUEMETER SIGNALS

810

816

813

ETHERNET

RS485

ANALOG 4-20mA / ±10V

ANALOG 4-20mA / ±10V

RS485

ETHERNET

803

RS485

ETHERNET

CUSTOMER
CONTROL / ACQUISITION INTERFACE

TorqTo™
Configuration and measurement analysis software.

TorqTo™ is the powerful software platform for the Torquetronic™ 800 series. It operates on the 803, 813 or any Windows™ PC.

TorqTo™ delivers intuitive configuration screens for the 810 signal processor together with impressive measurement analysis tools for Power, Speed, Torque, and Temperature. TorqTo™ also has an integrated torsional vibration analysis tools: FFT, Campbell Diagrams and Modal Plots.
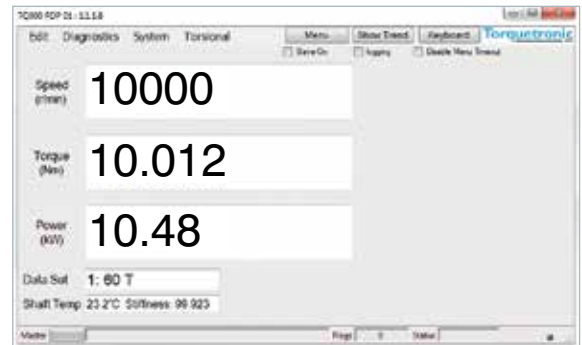
TorqTo™ enables efficient and simple configuration of the Torquetronic™ system including:

- Calibration data
- Analog outputs
- Communication parameters
- Alarms and trips
- Trends
- Peaks, e.g. torque and speed
- Diagnostic information
- Field calibration

TorqTo™ Torsional Analysis

The high measurement resolution of the Torquetronic™ system means it automatically captures torsional vibration present in the driveline. TorqTo™ processes the data, sampled at up to 10KHz, and provides detailed analysis.

TorqTo™ performs a Fast Fourier Transform (FFT), and displays torsional frequencies against amplitude. Analysis can be displayed in a Campbell Diagram / colour map of torsional frequencies or Modal Plot orders against machine speed.
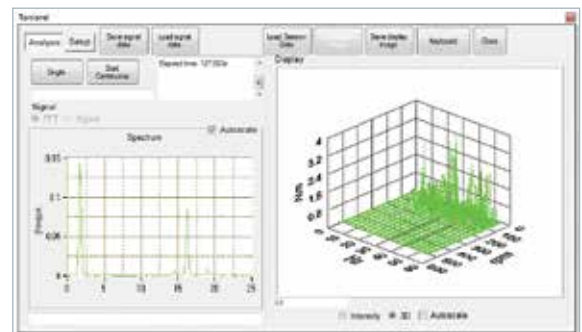
Software drivers (including DLL and sockets) containing the Modbus library are available to allow direct interrogation of the 800 signal processor. TorqTo™ can also be run as a slave to provide measurement data to further devices.

OPTION MODULES
THE SIGNAL PROCESSORS 810, 816 AND 813 HAVE AN EXPANSION SLOT TO ENABLE CONNECTION OF OPTION MODULES.

These option modules are all din rail mounted and provide additional system functionality.

820 Trips Module
Machine Protection

Four Volt free contacts (N.C.) configured for: Speed and Torque Alarm and Trip. TorqTo™ allows easy configuration to specify levels and Latching condition. Typical response time < 3ms.

821 Rotastat
Control Module

Enables accurate measurement of torque at zero speed for ET torquemeters fitted with a Rotastat. Typical applications "breakaway" and "stall" torque.

ET Torquemeter can be fitted with speed sensor option.

822 Bearing
Temperature Module

Four Channel RTD PT100 temperature sensor module used to integrate measurement of ET Torquemeters bearing temperatures. Displayed on TorqTo™ screen and available for data logging over digital communication.
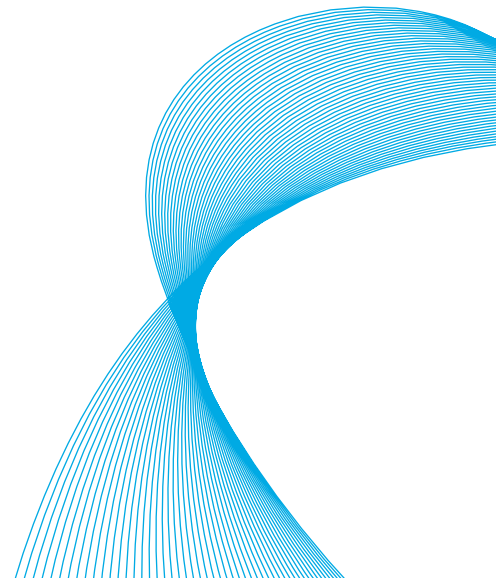
823 Dual Input Module

This option allows the user to connect two ET Torquemeters to a single processor. Please note only one Torquemeter can be operated at a time.

824 Shaft Thermocouple

The 800 series automatically compensates the torque signal for changes in shaft stiffness duty temperature variation. This module is only required only if the ET torquemeter is fitted with a "K" type thermocouple.

The option modules are all DIN rail mounted and can be retrofitted.

Torquemeters

SENSOR +
SENSOR -
SENSOR S

MOTOR +
MOTOR -

DC IN +V
DC IN 0V

821 ROTASTAT
CONTROL

800 Torquetronic™ Torque measurement system

|	810	816	813	803
Power Supply	24V dc, 15W		24V dc, 30W	24V dc, 20W
Display	Integral 4 line LCD display for diagnostic purposes Power, Speed, Torque, Shaft Temperature		7" TFT with touch screen Windows™ XP embedded operating system	
Inputs	Torquetronic™ transducer input, shaft temperature RTD, Data Select			
Resolution	0.01% phase. 1 rpm speed. 10kHz sample rate		0.01% phase. 1 rpm speed. 10kHz sample rate	
Outputs	Power, Speed, Torque, Shaft Temperature 4 × Analog Outputs, adjustable time constant from 0.1ms to 1s Scalable 16 bit Outputs Voltage: -10v to +10v DC Current: 4-20mA System Fault – Volt Free Contact			
Communications	MODBUS protocol. Ethernet 10Mbps, RS485. USB Interface		MODBUS protocol. Ethernet 10Mbps, RS485. USB Interface	
	TorqTo™ supplied on Disc		TorqTo™ Installed	
Certification	CE, FM EMC: EN61326:2-1, FCC.	CE, FM EMC: EN61326:2-1, FCC. ATEX, IECEx, II 3(1)G Ex nA [ia Ga] IIC T4 Gc	CE, FM EMC: EN61326:2-1, FCC.	CE, FM EMC: EN61326:2-1, FCC.
Environmental	Operating temperature -40 to +60°C	Operating temperature -20 to +55°C	Operating temperature 0 to +60°C	
	Storage: -40 to +80°C Humidity 95% non condensing.		Storage: -25 to +80°C Humidity 95% non condensing.	

803 Remote Panel Display
19'' 3U high
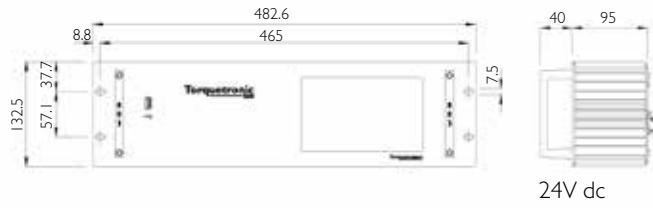
Phoenix Combicon Plug Connectors,
Screw Terminals
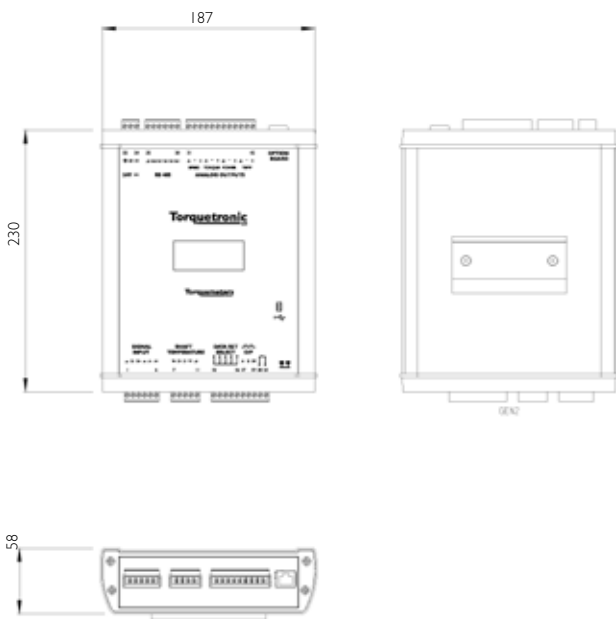
Weight: 2.4kg

24V dc

816 Field Mount Processor
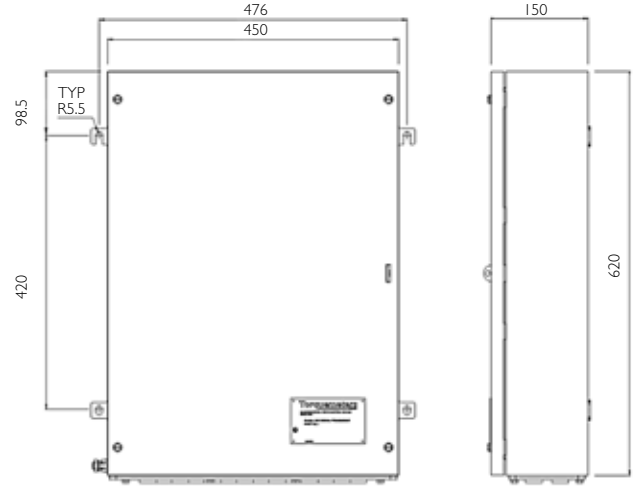
Industrial Stainless steel Exe enclosure.
Suitable for Zone 2/Div 2 hazardous area

Includes zener barriers for Exia transducer
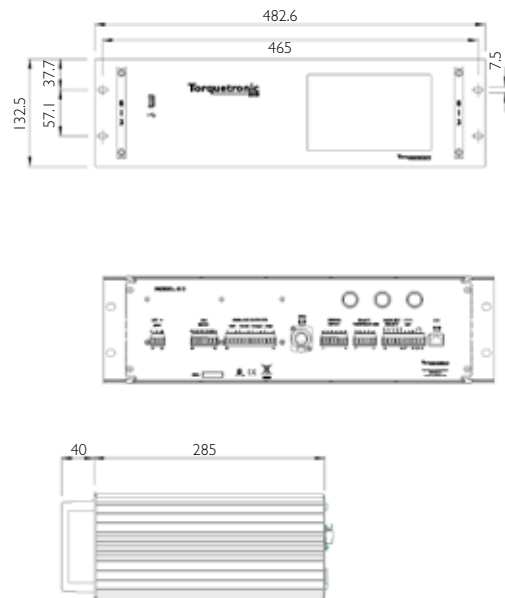connection. 24V dc 15W

Weight 23kg

810 Signal Processor

Weight: 1.8kg

813 Rack Mount Processor
19'' 3U high

Phoenix Combicon Plug Connectors,
Screw Terminals

Weight: 4.7kg

Torquemeters Limited
West Haddon Road
Ravensthorpe
Northampton NN6 8ET
United Kingdom

Tel: +44 (0)1604 770232
Fax: +44 (0)1604 770778
sales@torquemeters.com

www.torquemeters.com